m^2/g) and large average pore diameters which are characterised in that 98% of the pore volume have pores with pore diameters greater than 600 Å (e.g. about 1000-4000 Å) (cf. e.g. US-A 5.654.253, US-A 5.612.422, JP-A 03076706). More particularly, Raney nickel, nickel on silica or silica/alumina, nickel on carbon as support and/or noble metal catalysts e.g. Pt, Ru, Rh, Pd are used.

The reaction is generally carried out at temperatures between 0 and 380°C, preferably between 20 and 250°C, particularly between 60 and 200°C.

The conventional solvents which may be used for hydrogenation reactions are described, for example, in DE-AS 1 131 885 (see above).

The reaction is generally carried out at pressures from 1 to 1000 bar, preferably 20 to 300 bar, particularly 40 to 200 bar.

The stabiliser may be introduced at any moment in the preparation process of the vinylcyclohexane-based polymer before or after a process stage in solution, in the solid, liquid or gaseous aggregate stage. The process stages include, optionally, polymerisation which leads to a prepolymer, e.g. polystyrene derivative, optionally hydrogenation of the prepolymer, optionally an evaporation stage, and optionally extrusion or compounding of the vinylcyclohexane-based polymer.

The stabilised vinylcyclohexane-based polymers or copolymers according to the invention are outstandingly suitable for the manufacture of moulded articles and films. These are also particularly suitable for the manufacture of optical data stores, preferably with data storage densities of >5, particularly >10 gigabytes, based on a disc with a diameter of 120 mm.

The mixtures according to the invention may contain at least one of the conventional additives such as lubricants and mould release agents, nucleating agents, antistatic agents, stabilisers and dyes and pigments.

The mixtures according to the invention are prepared by mixing the vinylcyclohexane-based polymers or copolymers with the stabiliser system and optionally further additives and compounding at elevated temperatures (generally >230°C).

Examples of optical data stores include:

- magneto-optical disc (MO disc)
- mini-disc (MD)
- ASMO (MO-7) ("Advanced storage magnetooptic")
- DVR (12 Gbyte disc)
- MAMMOS ("Magnetic Amplifying magneto optical system")
- SIL and MSR ("Solid immersion lens" and "magnetic superresolution")
- CD-ROM (Read only memory)
- CD, CD-R (recordable), CD-RW (rewritable), CD-I (interactive), Photo-CD
- Super Audio CD
- DVD, DVD-R (recordable), DVD-RAM (random access memory); DVD = Digital versatile disc
- DVD-RW (rewritable)
- PC + RW (Phase change and rewritable)
- MMVF (multimedia video file system)

The polymers according to the invention, because of their outstanding optical properties, are also particularly suitable for the manufacture of optical materials, e.g. for lenses, prisms, mirrors, colour filters etc., also as media for holographic images (e.g. cheque cards, credit cards, identification cards, three-dimensional holographic images). The materials may be used as transparent media for inscribing three-dimensional structures e.g. from focused coherent radiation (LASER), particularly as three-dimensional data stores or for three-dimensional reproduction of articles. In view of the low birefringence, the polymers according to the invention are

particularly suitable as matrix material for photo-addressable polymers. The addition of the stabiliser leads not only to the general effect of thermostabilisation but also to better demouldability from the injection mould.